

REMARKS

The Office Action dated January 30, 2008 has been received and carefully reviewed. The preceding amendments and the following remarks form a full and complete response thereto. Claims 4-8 are hereby cancelled without prejudice or disclaimer to the claimed subject matter. (Claims 1 and 11 had been previously cancelled.) Claims 21-25 are new. No new matter has been added. Claims 3, 14, 16 and 19 are amended. No new matter is added.

Claim Amendments

Claim 3 is amended as to form only. Claim 14 is amended to be independent, incorporating the limitations of previous parent claim 16. Claim 19 is amended to be independent, incorporating the limitations of previous parent claim 16. Claim 16 is amended to recite limitations from claims 4 and 8, now cancelled. No new matter is added.

Rejections under 35 U.S.C. § 102(b)

The Examiner rejected independent claim 16 and dependent claims 2 and 6-10 under 35 U.S.C. § 102(b) as anticipated by U.S. Pat. No. 5,543,702 to Pfeiffer. With respect to presently cancelled claims 6-8, the rejection is moot. Applicants traverse the rejection of independent claim 16 and dependent claims 9 and 10 as improper because Pfeiffer fails to disclose each and every element of the claims as amended.

Pfeiffer discloses a charger for charging a number of disparate batteries. In the charger, a substantially constant current is supplied to each battery being charged. Charging is terminated when a reference voltage reaches a predetermined maximum. The battery charger may charge batteries of different sizes at the same time and includes a separate constant current circuit for each battery in the battery charger. Each battery is continuously supplied with charging or testing current as determined by a controller, and the controller controls charging of each battery independently of the charge condition of any other battery. See Abstract.

Pfeiffer fails to disclose a charge control circuit for a battery pack as recited in amended independent claim 16. Moreover, Pfeiffer fails to disclose that the state monitoring means comprise temperature sensors for detecting the battery temperature in the individual parallel branches and the

state monitoring means are set to switch the controllable switch of the respective parallel branch to the interrupted state when the change in the battery temperature per unit time exceeds a comparison value depending on the respective charge current through the parallel branch as recited in amended claim 16.

Amended claim 16 is also patentable over Pfeiffer because Pfeiffer fails to disclose switching a parallel branch due to excessive change in the battery temperature per unit time. (The Examiner had rejected certain claims reciting a temperature sensor as obvious over Pfeiffer in view of U.S. Pat. No. 5,539,297 to Fiebig. The Examiner had cited Fiebig for its disclosure of a temperature sensor. However, amended claim 16 is patentable over the combination of Pfeiffer and Fiebig because the combination fails to disclose, teach, or suggest switching a parallel branch due to excessive change in the battery temperature per unit time.) Thus, Applicant requests that the rejection of independent claim 16 and dependent claims 2, 9 and 10 be withdrawn for at least the above reasons.

Rejections under 35 U.S.C. § 103(a)

The Examiner rejected dependent claim 3 as obvious under 35 U.S.C. § 103(a) in view of Pfeiffer. For the reasons provided above, Pfeiffer does not disclose, teach, or suggest all of the claim limitations of claim 16, from which claim 3 depends. Therefore, claim 3 is patentable over Pfeiffer for at least the same reasons as claim 16.

The Examiner rejected dependent claims 4 and 5 under 35 U.S.C. § 103(a) as obvious over Pfeiffer in view of Fiebig. These rejections are moot in view of the cancellation of claims 4 and 5.

Finally, the Examiner rejected the remaining claims, claims 12-15 and 17-19 under 35 U.S.C. § 103(a) as obvious over Pfeiffer in view of U.S. Pat. No. 6,204,633 to Kitagawa. Kitagawa discloses a battery charging/discharging method and apparatus in which a charge/discharge monitor unit and control unit control switches inserted in series with each of multiple batteries based on the current flowing to each battery. See Abstract.

Applicant traverses the rejection of claims 12-14 and 17-19 as improper because the combination of Pfeiffer and Kitagawa fail to disclose “a respective controllable switch (15) having an integrated diode (23), or one which is connected in parallel therewith” and closing the switch “when a discharge current, having a minimum current level, flows through the diode (23)” as set forth in each of these claims or a parent claim. The rejection of claim 12 is erroneous for the additional independent reason that the combination of Pfeiffer and Kitagawa fail to disclose that “the controllable switches (15) are transistors, in particular field-effect transistors” as recited (the Examiner makes reference to bipolar junction transistor 116 in Pfeiffer Fig. 5).

Applicant traverses the rejection of claim 15, which recites a “battery pack having the charge control circuit as claimed in claim 16 integrated therein,” as improper because the combination of Pfeiffer and Kitagawa fail to disclose a battery pack with an integrated control circuit. Claim 15 is patentable over the combination of Pfeiffer and Kitagawa for the additional and independent reason that claim 15 is dependent on amended claim 16, which as described above is patentable over Pfeiffer, and Kitagawa fails to remedy the above described deficiencies of Pfeiffer.

Applicants therefore request that the rejection of claims 12-15 and 17-19 be withdrawn for at least the foregoing reasons.

New claims

Claims 20-25 are new. Support for claim 20 is found, inter alia, in original claims 1, 6, and 7. Support for claim 21 is found, inter alia, in original claim 2. Support for claim 22 is found, inter alia, in original claim 3. Support for claim 23 is found, inter alia, in original claim 9. Support for claim 24 is found, inter alia in original claim 10. Support for claim 25 is found, inter alia, in original claim 15. No new matter is added.

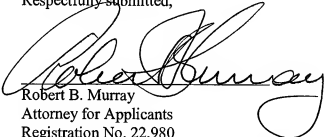
Claim 20 is patentable over the cited art at least because the cited art singly and in combination fails to disclose switching the relevant parallel branch to the interrupted state when the charge current flowing through the parallel branch exceeds a predetermined current value for the duration of a predetermined time interval as recited. Claims 21-25 are patentable over the cited art at least due to their dependency on patentable claim 20. Applicant requests allowance of these new claims.

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

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Date


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